

REMARKS

In response to the above-identified Office Action, Applicants amend the application and seek reconsideration thereof. In this response, no claims have been amended, no claims have been added and no claims have been cancelled. Accordingly, Claims 1-13 are pending.

The instant application is directed to a method for measuring a bone mineral density, by use of an X-ray image, in a bone mineral measuring system, comprising the steps of obtaining an X-ray image of bone, setting a region of interest on the obtained X-ray image of bone, calculating a background trend due to soft tissues, at a bone portion within the set region of interest, and calculating an index of the bone mineral density by removing the background trend due to the soft tissues, at the bone portion within the set region of interest.

I. Claims Rejected Under 35 U.S.C. §102(b)

The Examiner rejects Claims 1, 2 and 12 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,602,935 to Yoshida, et al. (“Yoshida”). Applicants respectfully traverses the rejections.

In order to anticipate a claim, the relied upon reference must disclose every limitation of the claim. Among other limitations, independent Claims 1 and 12 recite the step of calculating an index of the bone mineral density by removing the background trend due to the soft tissues, at the bone portion within the set region of interest.

In making the rejection, the Examiner alleges Yoshida teaches this element. Yoshida is directed to an improved method and apparatus for setting a region of interest on an image of a bone using measuring lines related to a bone axis and using radiation patterns along the measuring lines to measure the bone sample. The Examiner alleges Yoshida teaches the step of calculating an index of the bone mineral density in Col. 24, lines 33-37 and 50-52. This portion of Yoshida teaches a pattern of the soft tissue pattern is subtracted to obtain a corrected pattern for the bone proper and that bone mineral density is determined using the corrected pattern. Applicants respectfully submit, the above-recited excerpt from Yoshida does not teach or suggest the calculation of an index of the

bone mineral density. Applicants respectfully direct the Examiner's attention to dependent Claim 7, wherein Applicants teach the index is calculated from the value of the weighted average of the bone widths multiplied by a specific constant and the average value of the gray-level values at the bone portion after the background trend is removed. The Examiner specifically states on page 6 of the Action that "Yoshida is silent with regard to obtaining the gray level profile from the region of interest" and further finds Claim 7, which includes the above-referenced values, allowable if rewritten in independent form. Thus, as is evidenced from the Examiner's admissions, Yoshida does not teach or suggest the step of calculating an index of the bone mineral density as recited in Claims 1 and 12. Since Yoshida fails to teach or suggest each element of Claims 1 and 12, anticipation may not be found.

Accordingly, Applicants respectfully request withdrawal of the rejection of independent Claims 1 and 12. Claim 2 depends from Claim 1 and incorporates the limitations thereof. Therefore, Claim 2 is not anticipated at least for the same reasons as Claim 1. Applicants respectfully request withdrawal of the rejection of Claim 2.

II. Claims Rejected Under 35 U.S.C. §103(a)

The Examiner rejects Claims 3-5 and 13 under 35 U.S.C. 103(a) as being obvious over Yoshida and U.S. Patent No. 6,671,394 to Sako ("Sako"). Applicants respectfully traverse the rejection.

In order to render a claim obvious, the relied upon references must teach or suggest every limitation of the claim such that the invention as a whole would have been obvious at the time the invention was made to one skilled in the art. Claims 3-5 and 13 depend from Claims 1 and 12, respectively, and incorporate the limitations thereof. Thus, for at least the reasons discussed in regard to the traversal of Claims 1 and 12, Yoshida fails to teach or suggest the element of calculating an index of the bone mineral density by removing the background trend due to the soft tissues, at the bone portion within the set region of interest as found in Claims 3-5 and 13. Applicants are unable to discern, and the Examiner has not pointed to, any portion of Sako teaching this element. Since neither Yoshida nor Sako, alone or in combination, teach each and

every element of Claims 3-5 and 13, a *prima facie* case of obviousness may not be established. For the foregoing reasons, Applicants respectfully request withdrawal of the rejection of Claims 3-5 and 13.

III. Allowable Subject Matter

Applicants note with appreciation the Examiner's indication that Claims 6-11 would be allowable if rewritten in independent form to include all of the limitations of the base claims and any intervening claims. Claims 6-11 depend from Claim 1 and incorporate the limitations thereof. Thus, for at least the reasons discussed in the traversal of Claim 1, Yoshida fails to teach or suggest at least the element of calculating an index of the bone mineral density by removing the background trend due to the soft tissues, at the bone portion within the set region of interest as found in Claims 6-11. Accordingly, Applicants respectfully submit Claims 6-11 are allowable without being rewritten to include all the limitations of the base claim and any intervening claims as suggested by the Examiner.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending, namely claims 1-13 patentably define the subject invention over the prior art of record, and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner believes that a telephone conference would be useful in moving the application forward to allowance, the Examiner is encouraged to contact the undersigned at (310) 207 3800.

Respectfully submitted,

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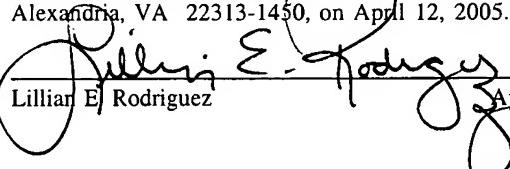
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Dated: 4/12, 2005

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on April 12, 2005.



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April 12, 2005

